AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (currently amended): A brake module adapted for connection to a brake system for a vehicle having at least four wheels and a hydraulic brake system, each wheel being provided with a respective brake and hydraulic brake actuator, each of the brake actuators being connected to a master cylinder, the master cylinder being actuated by a manually operated brake pedal, at least two of the brake actuators being connected to the master cylinder via a respective one of a first conduit and a second conduit, an ABS unit, including hydraulic components and an electronics module controlling the operation of the hydraulic components of the ABS unit connected to the first conduit and the second conduit being interposed between the at least two brake actuators and the master cylinder to provide at least anti-lock braking functions, comprising:

a body formed separately from the ABS unit and the master cylinder;

a first circuit of pressurized brake fluid formed in said body,

a second circuit of pressurized brake fluid formed in said body, said second circuit having at least one port formed in said body through which said second circuit may be connected with the first conduit of the brake system between the master cylinder and the ABS unit;

a third circuit of pressurized brake fluid formed in said body said third circuit having at least one port formed in said body through which said third circuit may be connected with the second conduit of the brake system between the master cylinder and the ABS unit;

~~a first set of at least two brake actuators operated by the application of pressurized brake fluid, each of the at least two wheel brake actuators being associated with a separate vehicle wheel;~~

~~a second set of brake actuators operated by the application of pressurized brake fluid;~~

an electrically operated pump mounted on said body, the pump being plumbed to urge brake fluid through said first circuit;

a first fluid separator unit coupled to said first circuit and said second circuit for substantially preventing the intermixing of pressurized brake fluid from said pump in ~~between~~ said first circuit with brake fluid in ~~and~~ said second circuit, said first fluid separator unit having a moveable pressure boundary which enables, through movement thereof, ~~said second circuit of pressurized brake fluid to selectively act upon said first set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said first fluid separator unit~~ pressure in said first circuit to be transmitted to said second circuit such that, when said second circuit is connected in communication with the first conduit, and the ABS unit permits, the fluid in said second circuit thus pressurized though the fluid separator unit will actuate the brake actuator connected to the first conduit; ~~and~~

a second fluid separator unit coupled to said first circuit and said third circuit for substantially preventing the intermixing of pressurized brake fluid from said pump in ~~of~~ said first circuit with brake fluid in ~~and~~ said third circuit, said second fluid separator unit having a moveable pressure boundary which enables, through movement thereof, ~~said third circuit of pressurized brake fluid to selectively act upon said second set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said second fluid separator unit~~ pressure in said first circuit to be transmitted to said third circuit such that, when said third circuit is connected in communication with the second conduit, and the ABS unit permits, the fluid in said third circuit thus pressurized though the fluid separator unit will actuate the brake actuator connected to the second conduit; and

~~wherein said first circuit includes~~ a proportional valve mounted on said body for selectively controlling ~~said pressurized~~ the pressure of the brake fluid of said first circuit acting on said first and said second fluid separator units.

2. (currently amended): The brake module of claim 1 wherein said ~~at least one~~ proportional valve comprises a ~~single~~ three-way proportional valve.

3-8. (cancelled)

9. (currently amended) A vehicle braking system comprising:

a first brake module, said brake module comprising:

a first circuit of pressurized brake fluid;

a second circuit of pressurized brake fluid;

a third circuit of pressurized brake fluid;

a first set of brake actuators operated by the application of pressurized brake fluid;

a second set of brake actuators operated by the application of pressurized brake fluid;

a first fluid separator unit coupled to said first circuit and said second circuit for substantially preventing the intermixing of pressurized brake fluid between said first circuit and said second circuit, said first fluid separator unit having a moveable pressure boundary which enables, through movement thereof, said second circuit of pressurized brake fluid to selectively act upon said first set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said first fluid separator unit;

a second fluid separator unit coupled to said first circuit and said third circuit for substantially preventing the intermixing of pressurized brake fluid of said first circuit and said third circuit, said second fluid separator unit having a moveable pressure boundary which enables, through movement thereof, said third circuit of pressurized brake fluid to selectively act upon said second set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said second fluid separator unit;

wherein said first circuit includes ~~at least one~~ a proportional valve for selectively controlling said pressurized brake fluid of said first circuit acting on said first and said second fluid separator units; ~~and~~

a control module for electronically controlling said first brake module;

a second brake module containing fluidic components to provide ABS functionality to said first and second sets of wheel brakes; and

an electronic ABS control module for controlling the ABS hydraulic module, said ABS control module communicating with said control module

wherein said first brake module and said second brake module cooperatively apply a braking torque to said first set and said second set of brake actuators.

10. (cancelled)

11. (original) The vehicle braking system of claim 9 wherein said second brake module comprises a traction control module.

12. (original) The vehicle braking system of claim 9 wherein said second brake module comprises a vehicle stability control module.

13. (previously presented) The vehicle braking system of claim 9 wherein said proportional valve comprises a three-way proportional valve.

14-30. (cancelled)

31. (currently amended) A vehicle braking system for cooperatively applying a portion a braking torque in a regenerative braking system, said braking system ~~brake module~~ comprising:

a first brake module, said first brake module comprising:

a first circuit of pressurized brake fluid, including:

a pump acting as a source of pressurized brake fluid;

a proportional valve with an inlet connected to said pump and having an outlet; and

a relief valve providing overpressure protection to said first circuit;

a second circuit of pressurized brake fluid;

a third circuit of pressurized brake fluid;

a first set of brake actuators operated by the application of pressurized brake fluid;

a second set of brake actuators operated by the application of pressurized brake fluid;

a first fluid separator unit coupled to the outlet of said proportional valve of said first circuit and also coupled to said second circuit for substantially preventing the intermixing of pressurized brake fluid between said first circuit and said second circuit, said first fluid separator unit having a moveable pressure boundary which enables, through movement thereof, said second circuit of pressurized brake fluid to selectively act upon said first set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said movable pressure boundary of said first fluid separator unit;

a second fluid separator unit coupled to the outlet of said proportional valve of said first circuit and also coupled to said third circuit for substantially preventing the intermixing of pressurized brake fluid of said first circuit and said third circuit, said second fluid separator unit having a moveable pressure boundary which enables, through movement thereof, said third circuit of pressurized brake fluid to selectively act upon said second set of brake actuators in response to said first circuit of pressurized brake fluid acting upon said movable pressure boundary of said second fluid separator unit; and

~~wherein said first circuit includes a proportional valve for selectively controlling said pressurized brake fluid of said first circuit acting on said first and said second fluid separator units~~;

a separate second brake module comprising components providing at least one of an antilock braking function and a traction control function, ~~wherein~~ said first brake module and said second brake module cooperatively apply a braking torque to said first set and said second set of brake actuators said second brake module including a first fluid conduit connected to said third circuit of pressurized brake fluid, said second brake module also including a second fluid conduit connected to said second circuit of pressurized brake fluid and provided with a relief valve for relieving any overpressure condition in said second circuit ; ~~and~~

a first control module for receiving sensed signals and controlling operations of said first brake module and;

a second control module for receiving sensed signals and controlling operations of said second brake module.

32 - 33. (cancelled)

34. (currently amended) The braking system of claim ~~33~~ 31 further comprising a powertrain control module for controlling a regenerative braking portion of the vehicle, said powertrain control module is in communication with said control module and said second control module for cooperatively controlling braking torque to said vehicle.

35. (new) A braking system comprising:

a brake pedal unit;

at least one wheel brake;

a first brake module, including:

a first body defining a first fluid circuit;

a pump having a discharge into said first fluid circuit, an electrically operated valve having an inlet and an outlet, the inlet of said valve being connected to the discharge of said pump, and a first relief valve connected between said pump and the inlet of said valve to provide overpressure protection;

a second fluid circuit including a fluid separator unit having an inlet connected to the outlet of said valve and an outlet connected to said brake pedal unit and to an outlet of said second fluid circuit; and

a first electronic control module for controlling the operation of said pump and said electrically operated valve; and

a second module, including:

a second body defining a fluid circuit in said second body having an inlet connected to both the outlet of said second fluid circuit and to the brake pedal unit and being connected to said at least one wheel brake; and

components, including an ABS pump and at least one ABS valve, providing antilock braking functions for said first wheel brake.

36. (new) The brake system of Claim 35, wherein said second module further includes a second relief valve for providing overpressure protection to at least a portion of said fluid circuit in said second body.